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Abstract

This article is about the use of audio media in researching places, which I term 'audio geography'. The article narrates some episodes from the production of an 'audio drift', an experimental environmental sound work designed to be listened to on a portable MP3 player whilst walking in a ruinous landscape. Reflecting on how this work functions, I argue that, as well as representing places, audio geography can shape listeners' attention and bodily movements, thereby reworking places, albeit temporarily. I suggest that audio geography is particularly apt for amplifying the haunted and uncanny qualities of places. I discuss some of the issues raised for research ethics, epistemology and spectral geographies.

Keywords

audio, drift, environment, experimental, haunting, landscape, ruin, sound, spectral

Introduction

It is raining the first time I visit Kilmahew. But that unassuming little word 'raining' really doesn't do justice to the full force of precipitation in the west of Scotland: from fuggy sodden drizzle to hammering showers, the set-in scowl of low pressure systems, day-long downpours soaking into rucksac straps, dribbling off Gore Tex, washing down pathways and sluicing about underfoot. Incessant rain has been the making of Kilmahew at ground level, cutting a double gorge down to the Clyde estuary. Two lively channels spill through woodland, over sandstone steps and igneous intrusions, beneath the rusted remains of 19th century footbridges, past unexpected bamboo thickets and Japanese maples laden with scarlet leaves. They babble below the burned out concrete hulk of a 1960s modernist masterpiece, skirt round an old walled garden, flow into each other then disappear off into the undergrowth. With a microphone plugged in and headphones on, there is always the rushing hiss of these burns under everything else. Water is both the leitmotif and background noise

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of Kilmahew, its sonic unconscious¹ and signature sound. More distinctive signals – bird chirps, the tinkle of a blind summit warning bell and shouts of ‘fore’ from a neighbouring golf course, honking horns as trains shuttle in and out of Glasgow – all rise out of the continuous sloshing, and die down back into it.

This article is about what could be called ‘audio geography’: geographical research in which audio media play a central role. It narrates the production of *Kilmahew Audio Drift No.1*, an experimental environmental audio work about a ruinous landscape, designed to be listened to on portable MP3 players whilst walking in that landscape. Reflecting on this work, I argue that, as well as representing places sonically, audio geography can also re-make landscapes.² In particular, portable audio devices afford the possibility to fold the sounds of a place back into that same place. The resulting displacement-replacement doubles a place back on itself, sounds returning as revenants³ that generate, at least for some listeners, uncanny affects of ambiguity, haunting and hallucination, especially in ruinous places, which often already have a ghostly feel.⁴

Affects of this kind have the potential to reconfigure listeners’ relationships to place, to open up new modes of attention and movement, and in so doing to rework places, albeit in ways that may be small-scale, temporary and difficult to articulate. Such geographic effects and affects are less readily produced by more conventional modes of research. Audio geography can thus be understood as part of the broader repertoire of experimental geographies⁵, where the aim is to actively intervene in the production of space, from the inside as it were, rather than analysing it from an exterior vantage point. In particular, the capacity of audio geography to amplify the haunted qualities of places answers Wylie’s⁶ call for ways of doing research that are not only about the spectral but are themselves spectral, performing hauntings. At the same time, the affective potency of environmental audio intensifies ethical issues. Audio geographies can generate fear, confusion and distress,⁷ especially when used in hauntological ways. This calls for critical reflection rather than naïve celebration.

Geographers have for some time now been writing about the need for experimentation with different styles and modes of research.⁸ I have argued elsewhere that audio methods have much to contribute in this regard.⁹ Yet there remains a sense that experiments with sound are primarily the preserve of artists and musicians, with academics positioned as interested observers, commentators or collaborators,¹⁰ but less often as producers. As Jones suggests, ‘many of us are still uncomfortable in ‘doing’ art ourselves as a research practice.’¹¹ The work reported on in this article adds to a small but growing body of geographical research involving creative audio production as a central element.¹² Recounting and reflecting on the methods and methodology of one audio geography project, the article opens up space to think more broadly about the functions of environmental audio, and the ways in which places can be worked with and remade through sonic media. Geographers often seek different ways of writing places;¹³ what I offer here are pointers towards some ways of sounding places.

The article begins by setting out the context of the audio drift and its site. A narrative of method then follows, detailing how the drift was produced. I conclude with more general reflections on the functions of environmental audio in research. The article does not require readers to have experienced the audio drift, but those who wish to do so can download it from <http://www.theinvisiblecollege.org.uk/AudioDrifts>.

Though designed for audition at Kilmahew, the drift can of course be listened to anywhere. However, the effects of doubling and haunting discussed in the paper will inevitably be different, and probably less pronounced, than if the work is experienced in situ. Regardless of listening location, the use of headphones is strongly recommended as the drift includes many binaural recordings. These create spatial effects that are not reproduced over loudspeakers.

Throughout the article, I use the term environmental audio to refer to practices that use audio media to work with, and intervene in, the myriad soundings of environments. This contrasts with the more conventional approach of professional audio engineering, in which environmental sounds tend to be heard as noise and hence minimized or at least carefully circumscribed, giving priority instead to music or speech. Recorded voices feature centrally in *Kilmaheew Audio Drift No. 1*, but these are layered with field recordings, and the work was designed to blend with, rather than exclude, sounds happening in the site that spill in around the headphones. The most long-standing tradition of environmental audio is wildlife sound recording, but the audio drift was informed more by soundscape composition and environmental sound art. For the uninitiated, these areas of practice are concerned with the totality of sounds-in-the-world, particularly ambient or background sounds that may ordinarily go unnoticed. Common practices include: making field recordings, including the transduction of inaudible vibrations using devices such as hydrophones and contact microphones; making compositions from field recordings, and distributing these via CDs, MP3s, vinyl, radio or online platforms such as weblogs, digital audio maps and podcasts; site-specific performances and installations; and audio walks designed for listening on portable devices whilst moving through a particular environment, such as the work reported on here.

Context: Kilmaheew and the Invisible College

Kilmaheew is a place whose geography has been formed by successive cycles of ruination and renewal. Located near Cardross, about 20 miles west of Glasgow, it is a wooded glen surrounding the confluence of two burns. Its oldest ruin is a small castle built in the 15th or 16th century, originally the ancestral home of the Lairds of Napier. During the 1700s, the Napiers' wealth declined, and in the 1850s the estate was sold to a wealthy Glasgow shipowner, who redesigned Kilmaheew as a picturesque landscape with a grand baronial mansion house and ornamental gardens, outbuildings, walled kitchen garden and exotic plants.

Following World War II, the estate was bought by the Catholic archdiocese of Glasgow. The mansion was repurposed as a seminary, a residential college for the training of student priests. Its capacity was later expanded through the addition of a complex of striking modernist buildings surrounding the old house. Opened in 1966, St Peter's College was the masterwork of architects Isi Metzstein and Andy MacMillan of Glasgow firm Gillespie, Kidd & Coia. The building fused the hard lines of brutalism with softer late modernist features. Alongside austere concrete surfaces and cantilevers arching out over the gorge were masses of random mullioned glazing, white harling, repeating barrel vault curves and slatted pine interiors. It looked like something from a science fiction film, earning it the nickname 'the space station' amongst some of its inhabitants, and winning architectural awards. But its development was ill-timed. Student numbers declined unexpectedly in the late 1960s and 1970s, leaving much of the new accommodation redundant. Numerous defects in the built fabric also became apparent, and changes in Catholic teaching practices rendered aspects of the building obsolete. In 1980 the seminary closed. The mansion house and convent block were used as a drug rehabilitation centre between 1983 and 1987, and thereafter the site was mothballed and effectively abandoned.¹⁴

In the years since the closure of the seminary, many schemes for the commercial redevelopment of the site have been put forward, but all have proved economically unfeasible. Protected from demolition by a Category A listing, the building has fallen into severe ruination, with the woods round about growing wild. In this state, St. Peter's attracts a steady stream of graffiti artists, photographers, architecture students, local teenagers, urban explorers, film makers, musicians and illegal ravers, and has been the subject of long-running campaigns to save it from destruction. A



Figure 1. The ruins of St Peter's College, near Cardross.

contested place, it is often referred to as Scotland's finest modernist building, but many local residents consider it an eyesore that should have been demolished years ago.

In 2010, an environmental arts charity called NVA¹⁵ began developing a not-for-profit plan to partially restore the site, creating a multi-functional space within the seminary to host art commissions and residencies, public education and research, whilst allowing other areas to remain ruined.¹⁶ An initial phase of on-site research took place in 2012–13 under the banner of the 'Invisible College': a learning network without fixed premises, reinventing the teaching function of St Peter's but in a radically democratized form. Participatory activity days were organized, bringing together people with an interest in Kilmahew and St Peter's from a wide variety of backgrounds, including local residents, architects and landscape architects, artists, academics, conservationists, planners and woodland managers. The network was led by geographer Hayden Lorimer, in collaboration with NVA and academics with expertise in architecture and design.

An audio drift

Kilmahew Audio Drift No.1 was conceived as an inaugural creative commission for the Invisible College. The initial idea was for a portable audio work, using field recordings and recorded interview material to seed stories about the past, present and possible future of Kilmahew back into the landscape. Works of this kind are usually referred to as 'sound walks' or 'audio walks' and perform a variety of functions, from the didactic guided tours familiar in galleries and museums, to more experimental artworks such as Janet Cardiff's cinematic reimaginings of place¹⁷ and Christina Kubisch's exposures of hidden electromagnetic vibrations, to projects framed as research about places and landscapes.¹⁸ For the Invisible College, a portable audio work had practical appeal as Kilmahew is accessible only on foot and has no stable infrastructure or power sources. MP3 players are increasingly ubiquitous, so using that format, with the audio file available online for potential listeners to download, seemed a good way to maximise access. Our hope was that such a work might invite further engagement with the site, stimulate debate and perhaps attract some additional visitors. In part, then, the work was designed to be representational, with sounds that would tell



Figure 2. Participants in an Invisible College activity day. Photo by Neil Davidson.

listeners about Kilmahew, ‘putting geographical information out into the field, to be understood in the context of a location’.¹⁹ It was also designed to be participatory, involving members of the local community in making recordings, identifying sounds to record and offering their stories and memories for recording. We anticipated that local residents would be the primary audience for the work due to their proximity to the site.

Whereas most audio walks have fixed routes, with a map, GPS track or a recorded voice giving directions, Kilmahew is a landscape with many layers and stories that invite itinerant exploration. A single route seemed too narrowly prescriptive, so we opted for a work without a set path, with participants encouraged to wander, allowing for chance juxtapositions between soundtrack and landscape. DeSilvey and Edensor write that ‘[a]s sites characterized by multiple temporalities, ruins offer opportunities for constructing alternative versions of the past, and for recouping untold and marginalized stories’.²⁰ A work with no predetermined route made space for such alternative histories, enabling a plurality of stories to be stitched together, partial and fragmentary like the ruins themselves, encouraging imaginative fictionalizations of place that were not tied ‘to time, chronology, or official history’.²¹

Alongside the dominant narrative arc of architectural triumph and disaster, interviews with local residents, former seminarians and others unearthed a multitude of ‘smaller stories’:²² the three piece suite that one student priest managed to squeeze into his rooms; a parrot that lived in the old mansion; games of football and badminton in the refectory; a local resident’s threat to chain himself to a rhododendron tunnel if invasive species removal goes ahead as planned. To make space for this multiplicity, a multi-track, polyphonic construction was used, inspired by Glenn Gould’s Solitude Trilogy of radio documentaries, particularly *The Idea of North*, which works contrapuntally with overlapping voices. The drift included a wider range of sounds, with layers of environmental field recordings and voices blending and bleeding into each other, aligned so as to create tangential associations that might invite wandering of both the mind and the feet. Thus as well as being representational, the work was also conceived as a way of reconfiguring visitors’ movements through the site, using a particular tempo and rhythm to invite imaginative meanderings and shifts in attention.²³ In this sense, mobile audio offered a kind of

nomadic architecture,²⁴ a means by which to intervene in the production of Kilmahew as storied place and sounding space.

As the work took shape, I began to think of it as an 'audio drift' rather than an audio walk. There was a passing influence here from Debord, whose notion of the *dérive* (drift) is often referenced by psychogeographers and others interested in practices of walking. Yet Debord's *dérive* involves a specific method that I did not follow. 'Drift' here refers instead to several related kinds of movement: my own wandering around Kilmahew as I sought out sounds to record; a drifting between the different sonic elements as they were mixed and layered together in the composition; a drifting of both bodily movement and conscious attention experienced when walking and listening back to the work; and the drift between the work's pre-determined form and the unpredictable movements of listeners, and hence between elements in the soundtrack and elements in the site. A listener might end up hearing a recording of golfers whilst in the ambience of the walled garden, or hearing a recording of digging against the backdrop of a gushing waterfall, or catching recorded voices discussing the seminary whilst looking at the ruined castle.

The drifting, then, was as much in the walking as in the work. Walking has received considerable attention in recent years, both as social practice and research method.²⁵ Myers suggests that audio walks are participatory theatrical performances²⁶. Recorded sounds are rearticulated through the movements of the walking listeners, their encounters with a site and the spontaneous juxtapositions that arise, such that walkers become co-creators of the artwork.²⁷ Following Ingold's argument that, '[t]hrough walking...landscapes are woven into life, and lives are woven into the landscape,'²⁸ walkers can also be seen as co-creators of landscapes. Their walking makes and re-makes paths rather than merely following them. Walked works such as the audio drift thus contribute, albeit in small ways, to the (re)formation of landscapes.

The work was entitled *Kilmahew Audio Drift No.1* in homage to Luc Ferrari's *Presque Rien No.1*, a seminal early soundscape composition. The 'No.1' was also an implicit invitation for remixes or new drifts as the landscape continues to change in the future. Drafts of the drift were presented at Invisible College on-site events in July and September 2012. In 2013 the final version was made available for free download from the Invisible College website and launched with another event at Kilmahew.

The following three sections of the article narrate some episodes from the production of the work, detailing the methods used. I then conclude with reflections on the functions of the drift, and the wider implications of audio geography for research ethics, epistemology and the spectral. My narrative uses the present tense to invoke how the methods used unfolded in practice, rather than being fully planned out beforehand, and to frame audio recording as practice as well as product, a process happening-right-now and hence an immediate presencing as much as the re-presentation of something from the past. The narrative also uses repetition and temporal disruption to evoke cyclical time within a linear chronology, reflecting the site's history of repeated ruin, my multiple visits and repeat encounters with the same spaces and sounds when making the drift, and the intrinsically repetitious nature of audio recording as a means of replay.

Grounding

It is raining the first time I visit St Peter's College, led here by a friend and fellow fan of modernist architecture.²⁹ Hiking past farmed fields and a golf course, a secluded driveway winds through woodlands, and the landscape feels about as far from brutalist concrete as one could get – and then there it is, suddenly looming up from the trees like a toothless old car park. A galvanized metal fence surrounds the perimeter, but some previous visitors have helpfully removed a couple of struts

to allow access. Slipping through the gap and into the undercroft of the main building, our feet crunch on broken glass, charred wood and rusting metal.

You've never seen such wanton vandalism. In one night, 104 sinks (and their 208 taps) were torn out by some unidentified and thorough looters with access to a ready market and a very big van ... The interiors were once bounteously timbered; only a very few panels remain. Whole staircases are gone. Every fitting, furnishing and fabric has been ceaselessly smashed, kicked in, ripped out and wrecked.³⁰

The persistent precipitation has played its part too. In hindsight, the flat roofing of the college was a spectacular piece of post-war over-optimism, a design decision in denial of the local climate. A priest who studied here in the late 1970s recalls that there were 'buckets all over the building' to catch the leaks. And the leaks continue to spring, drumming up a fair racket as water drops into empty stairwells and bounces off chunks of debris. We play with placing bits of resonant rubbish under persistent drips near the altar: crushed cider bottles, rusted Irn Bru cans, paint tin lids, empty tubs and cartons. Soon we have sonorous thunks, dings and pings echoing off the hard concrete walls. Smitten by these sounds in this sad, smashed up place, I begin to think about creating an audio work for the site.

It is raining the first time I go to Kilmahew to make field recordings, some three years later. Slipping through the gap in the fence and into the undercroft of the old college, my feet crunch on broken plaster, shattered glass and rusted metal. I hear falling water clattering, spattering, reverberating around cavernous space. An uncanny sensation comes over me: the seminary feels alive, its materials moving of their own accord in the heavy weather. Is there someone else here? Spooked, I look around for lurking shadows, but can't see anyone. In the chapel, I nervously pull gear from my rucksack: a stereo mic in a furry windjammer, a tangle of cables and a digital recorder. Through headphones the soundscape is suddenly magnified. Beneath the dripping a faint droning comes and goes – perhaps a mowing machine on the golf course? This bleed and spill, this layering of sounds, bears witness to the seminary's ruination. Its once cloistered enclave has been shattered outwards, modernist lines giving way to a profound porosity.

In fact, the soundproofing at St Peter's was never any good. In a 1967 issue of *Concrete Quarterly*, amongst eulogies to other feats of 20th century cementwork such as the Mancunian Way and some sewage tanks in Düsseldorf, one can read a glowing account of the then brand-spanking-new building. It reports a happy marriage of sacred and everyday sonics:

The sounds which echo round the vaults vary from the spirituality of evensong, sung with the candles flickering against the darkening windows, to the strictly material clamour of young men seeing who can get to the billiard table first.³¹

Based on the recollections of one interviewee who studied here, we can add to this the occasional muffled splatters of urine, faeces and vomit. The acoustic isolation in the college was reportedly so poor that anything happening in the toilets was clearly audible in the chapel and vice versa, a wincingly embarrassing invasion of the sacred by the profane. I briefly consider making reconstructions of these unholy waters to add into the mix, but soon think better of it. Some things are best left in the past.

Sounding

Convolution reverb offers the promise of virtual acoustic geography. In any space, one makes an 'impulse response', a recording of a sharp burst of sound, ideally full-frequency, and the resulting reflections. Back in the studio, this can be used as a kind of sonic fingerprint, loaded into a software plugin to produce a model of the acoustics of the space. Any audio fed through the plugin is



Figure 3. A spaced pair of miniature DPA 4060 omnidirectional microphones mounted on a wire coathanger and used to record an impulse response from the chapel area. The furry covers are Rycote wind jammers, used to prevent wind noise.

processed using Fourier Transform functions to make it sound more or less as though it had been made in the space where the impulse response was recorded.

‘More or less’ – that’s the theory at least, but in practice the process has some interesting imperfections. To make an impulse response in the seminary’s chapel, I fire a starter pistol, a standard technique used by acousticians for this purpose. But the pistol has an uneven frequency spread, with energy concentrated in the mid-range, so low and high frequency reverberations are under-represented in the model. The result is a rough approximation of the chapel’s reverb, but would more accurately be described as a hybrid of pistol and chapel acoustics, something of a shotgun marriage given the religious history of the space.

I spend many hours rambling through the woods that surround the seminary, listening intently, searching for sounds to record. In this landscape water falls and runs but it also sits and stands, pooling in ditches and ruts, forming boot-shaped puddles in splodgy mud and gathering in the vegetation-choked remains of an ornamental pond. One local resident recounts how, in the estate’s Victorian heyday, his family used to skate on its frozen surface and play ice hockey with walking sticks. Here, on a cold clear February day, a thin glaze of ice sparkles in the sunlight, making a frosted window onto the clog of dead leaves below. Mics running again, I crack off crystal shards and wing them skittering away, shattering like plate glass. In summer I chuck in a hydrophone and catch the faint fizz of pond weeds respiring.

As well as environmental sounds, I want to work with the voices of people associated with Kilmahew, both past and present. The woods can seem lonely and wild, but Kilmahew has an ancient history of settlement, and signs of more recent human activity abound – rusting disposable barbeques, piles of fading lager cans, footprints in the path. Bringing a variety of voices back into the site will help to unsettle an all-too-easy narrative of depopulation, keeping nature and culture firmly intertwined. Fourteen interviewees are chosen, spanning different eras and interests: two

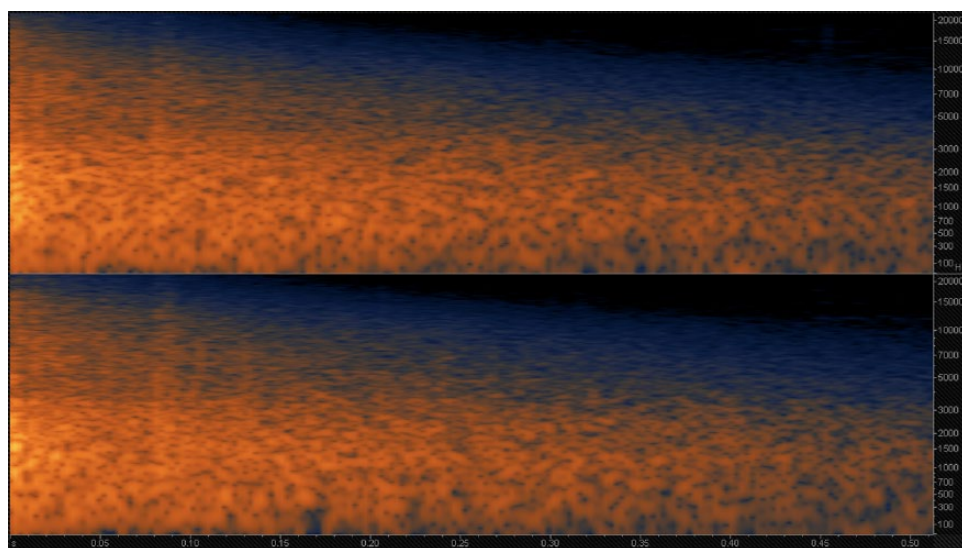


Figure 4. Spectrogram of the recorded impulse response (x axis shows time, y axis shows frequency, lighter areas indicate higher amplitude). There is a concentration of mid-range frequencies in the pistol shot, seen at the far left.

former seminarians, staff from NVA, an architect, a pair of women with memories of the drug rehabilitation project and several local residents. I record volunteers digging a new vegetable bed in the walled garden, and hear opposing views about the management of *rhododendron ponticum*. As part of NVA's community heritage activities, a local student records some vivid oral histories. I aim for a balance of male and female voices, but this proves challenging as Kilmahew has a strong patriarchal lineage with its history of Lairds, priests, male architects and (sub)urban explorers.³² Where possible, I record interviews on site, encouraging interactions between people and landscape.³³ I also ask my interviewees what sounds they associate with Kilmahew, and their responses shape subsequent recording sessions. Invisible College activity days provide further opportunities for recording conversations and environmental sounds.

Binaural recording is often used in audio walks,³⁴ and it soon becomes my technique of choice. Miniature microphones are placed next to the ears, incorporating the acoustics of the human head into the recording process. When listened to over headphones, the results create a lifelike sensation of space: 'it is almost as if the recorded events were taking place live',³⁵ generating aural illusions and ghostly presences, like those felt by Pinder in an audio walk by Janet Cardiff.³⁶ Listening in situ it is often unclear which sounds are in the drift and which are outside, especially with cheap earbud headphones, whose acoustic isolation is typically poor. Sounds from the environment spill in, generating disorientation and confusion, a sense of ambiguity about what is 'really' going on.

De Certeau writes that '[t]here is no place that is not haunted by many different spirits hidden there in silence'.³⁷ Yet there are some places whose spirits seem less hidden, less silent, closer to the surface. The ruins of Kilmahew are particularly prone to uncanny or dreamlike atmospheres, ambiences and sounds. One interviewee recounts how a friend felt a strange presence on the way down to the walled garden, the spirit of a small child in distress. An online write-up by some urban explorers reports that '[o]n a number of occasions we were sure someone else was watching us. The place plays tricks on you and it's difficult to determine what sounds are man made.'³⁸ Kilmahew's thick foliage and tumbledown walls act as acousmatic screens, with sound from



Figure 5. DPA 4060 microphones attached to walking boots to record footsteps and textures underfoot.

unseen sources seeping in – distant shouts, echoing noises emanating from the seminary, a persistent low frequency drone whose source is obscure.

In this landscape, listening tends towards the impressionistic and uncertain. Jean-Luc Nancy's distinction between *entendre* and *écouter* is useful here.³⁹ *Entendre* connotes a form of hearing orientated towards understanding, 'grasping and affixing the world through intentional acts'.⁴⁰ By contrast, Kilmaheew invites *écouter*, a listening that stays closer to the sensory qualities of sound, never quite settling into signification, 'straining toward a possible meaning, and consequently one that is not immediately accessible'.⁴¹ Field recordings, traced into media and then displaced out of context, heighten this inaccessibility of meaning. While some recordings are clearly identifiable and thus function representationally – birdsong, footsteps, chattering voices – many are more abstract and unclear, opening up space for imagination and reverie, amplifying Kilmaheew's haunted qualities.

Assembling

The Irresistible Force track *Playing Around With Sound*, by ambient DJ and producer Mixmaster Morris, opens with a sample of an interview with John Cage. Seemingly recounting a question he was once asked, Cage is heard to say, 'putting all these sounds together, aren't you afraid that you're going to get white noise? And I said, I'm sure it'll be noise but I doubt whether it'll be white!' It's a line that comes to mind repeatedly as I assemble the drift in the studio, layering together fragments from many hours of recording.

The overall sequence is structured around a rough chronology to provide some basic orientation. The drift begins with a gentle start to draw listeners in: a romantic woodland ambience, birds twittering, an elderly male voice speaking in warm tones about the Victorian phase of the estate, and musings on the ancient history of the wider landscape. These sounds are followed by more conflicted and multi-layered material relating to the seminary. Then come recordings and stories

from current activities such as woodland management and community vegetable growing. Lending an ear to the future, the drift ends with recordings of interviewees expressing their hopes for the site's reinvention, looped onto cassette tapes, played back simultaneously on dictaphones in the walled garden and re-recorded binaurally – the future already ruined by an obsolete format, crackling voices like ghostly traces.

But even with the messed up ending, this chronology is far too neat. Instead of using the drift to straighten out Kilmahew's mess, I respond to the lie of the land with a more tangled routing, repeatedly disrupting the narrative by drifting off at tangents, inserting material out of sequence, juxtaposing audio from different times and spaces. Inspired by the unexpected coincidences that arise from the motley assemblages of ruinous matter strewn across the landscape, I listen for moments of resonance at which recordings can be knitted together. I layer an architect analysing the gothic modifications made to the medieval castle with a student talking about a gothic themed fashion shoot that took place there. A local resident talking about how there was a special 'something in the water' from the hills round about is spliced with hydrophone recordings of the Wallace-ton burn, which then fade into another local talking about a hidden well in the area. A story about walking the family dog in the Victorian era is interrupted by the sounds of a Dalmatian that ran up and barked at me one day as I was recording by the pond.

The dog was recorded binaurally, and listened to in situ the creature seems to jump out in the path, unseen but startlingly lifelike. I throw lots of these binaural phantoms into the drift to accentuate the landscape's haunted, uncanny qualities: a woodpecker knocking high up in the trees; voices thrown off into the distance; footsteps that sound eerily close behind. At points audio material from elsewhere seems to fit, and I opt for playful psychogeographic fictionalization rather than a purist approach. A teenager talking about a rave at the seminary calls to mind an elegiac white-label dancefloor banger by Equalised (an alias of Berlin techno producer Shed), so I sample a section and mix it in. The haunted flavour is enhanced by sending the music through the chapel convolution reverb model and some additional low end boost, making it sound as though the party might still be going on inside the ruins, a sort of ghost-rave, like the ballroom scene from *The Shining* remixed for the post acid-house generation. The hedonistic mood is then brought down to earth with a recording of a looping automated safety announcement heard at a station en route to the site: 'customers are reminded to always use the handrail and take care on the stairs'.

Throughout the research, Kilmahew confirms its reputation as a contested rather than consensual place. The seminary invokes divergent views amongst interviewees, both adored as an architectural treasure and reviled as a Corbusian carbuncle. Using the stereo space afforded by headphones, voices eulogizing it are panned towards the left and voices pointing out its flaws are panned towards the right, positioning the listener in the middle of the debate. Academic work conventionally follows the logic of a single-track sequence, argument followed by counter-argument, but the drift allows competing ideas to run alongside one another. This polyphonic structure requires serious labour, continually tweaking levels and timings to ensure all sides of the argument are given a fair hearing, keeping the mix busy but not too cluttered. A composer friend gives me some crucial advice: listen back through bog-standard iPod-style earphones when mixing instead of expensive studio headphones, to give a better sense of what the work will sound like for the majority of listeners. I use software automation to change volume levels over time by drawing in innumerable points and lines (see Figure 6). Each point has to be added in, adjusted and re-adjusted several times by hand – a reminder that working with digital audio is as much a visual as an aural activity,⁴² and as much about careful technical control as about creative experimentation.

The layers gradually pile up. In the end I use nearly 70 tracks of audio, patched together with countless cuts and crossfades. For every hour spent tramping around Kilmahew, several more are spent

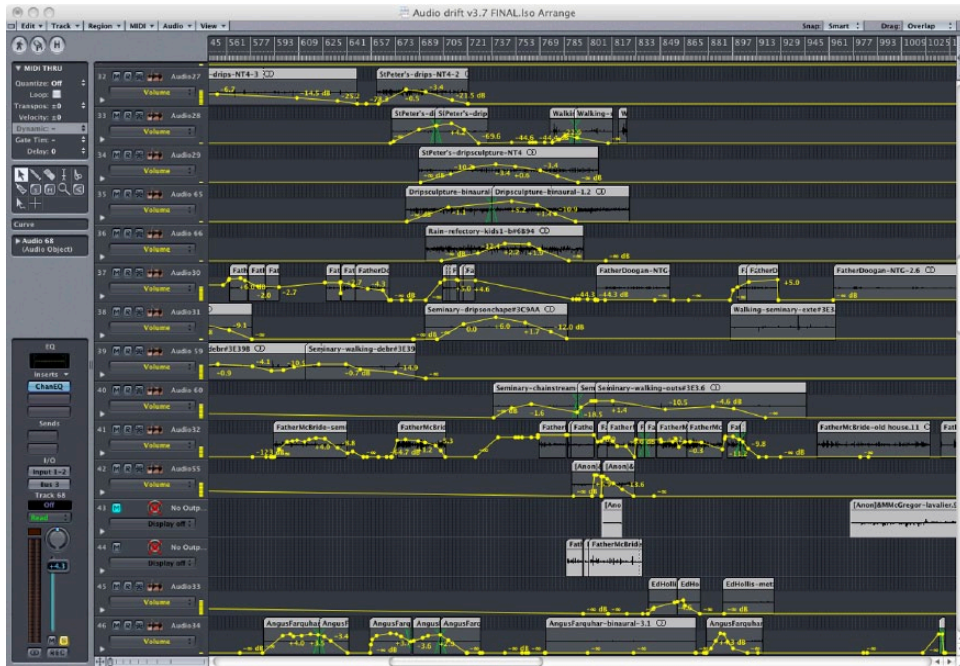


Figure 6. Screenshot of the audio drift in Logic Pro digital audio workstation software. The fine lines punctuated with dots are automation and control the levels of the different tracks.

enclosed in my small acoustically-treated studio in Edinburgh, long airless days cooped up clicking a mouse button, repeatedly reviewing and tweaking one tiny section at a time. It's all a far cry from the image of the site-specific fieldworker. Another incongruity is the impossibility of having any sense, whilst hunched at the computer, of what the work will sound like in situ. I want to balance the levels such that 'live' sounds in the environment will still be audible, folding soundtrack into soundscape, blurring the distinction between them. But this is impossible to judge in the studio. Draft mixes are aired at two group visits to the site, but these test runs aren't enough to go on, and with Kilmahew a three-hour trip away from my studio, the local neighbourhood has to stand in as a proving ground on several occasions. I bounce a hopefully-nearly-finished version to my iPod and grab my coat.

It is raining as I walk out onto the street, pop in the earphones and hit the play button. But that unassuming little word 'raining' doesn't do justice to the bitterness of the precipitation here on the east coast of Scotland: the battering showers, the icy barbs blown into the face by gale-force gusts, cold puddles seeping into shoes. As the light fails in the late afternoon of winter, I search out quiet spots away from traffic noise, wandering along back streets, a near-deserted cycle path and then the dead calm of a cemetery. Raindrops rattling on my hood make a fitting counterpoint to the voice of a priest who trained at the seminary recalling how there were 'buckets all over the building' to catch the water dripping from the leaks.

Reflections: representational excess and uncanny affects

In what remains of this article, I want to consider the audio drift's functions and the wider implications of using environmental audio in geographical research. The effects of such works will of course vary widely depending on 'weather, transformations of the landscape, walkers' corporeal

rhythms, capacities, desires and mood'.⁴³ However, based on my own experiences and feedback from listeners,⁴⁴ there are some recurring tendencies that warrant reflection. These centre on the more-than-representational excess of environmental audio and related affects of the uncanny.

In part the drift functioned representationally, creating a sonic portrait of Kilmahew and narrating some of its stories. Recognizing this aspect of audio geography is useful for critical reflexivity about power, ethics, inclusion and exclusion.⁴⁵ Working with voice recordings compromises the social research convention of anonymity, for example. As well as informing interviewees that the recordings would be used for the drift and gaining their explicit consent for that, I felt a responsibility to edit the material in a way that would be respectful towards them, representing their contrasting views and experiences without allowing any one voice to dominate.

However, there is also a failure of representation in audio recording, perhaps better understood as a more-than-representational excess. Koutsomichalis has argued that 'phonography fails as a medium to preserve, to document, or to represent environmental sound in its essence' since a recording cannot 'preserve the original semantics and subliminal significances of someone's encounter with an acoustic environment'.⁴⁶ Recordings 'isolate[s] physical sounds from a broader scheme ... radically dismantling the associations they bear'.⁴⁷ On playback, sounds are recontextualized in another space and time, giving rise to new associations. As LaBelle remarks, 'as a listener I hear just as much displacement as placement, just as much placelessness as place ... the extraction of sound from its environment partially wields its power by being boundless, uprooted and distinct'.⁴⁸

This argument should not be confused with the audio engineering logic of fidelity, which understands recordings as imperfect, degraded copies of a fuller and more lively original source.⁴⁹ On the contrary, it may be audio's capacity to record an excess of sound that complicates its representational functions. Audio recordings are much less selective than human hearing, since they register the 'messy, asignifying noise of the world'⁵⁰ without discrimination: 'The apparatus unsemantically 'listens' to the acoustic event, whereas the human ear always already couples the physiological sensual data with cognitive cultural knowledge, filtering the listening act'.⁵¹ This filtering still operates when we listen to recorded sounds, but – crucially – it works differently, since the displaced sounds no longer correlate with other aspects of the situation. In the case of *Kilmahew Audio Drift No.1* we may hear, for example, what sounds like a woodland in springtime through the headphones, but other cues – both sounds from outside the headphones and other sensory perceptions – tell us that we are in a woodland in winter. This doubling creates an excess of meaning, less a representation of springtime than an uncanny sense of the two seasons merging.

Environmental sound art embraces these qualities of displacement, excess and doubling, using them to open up space for the play of imagination, fantasy and reverie. Such practices offer researchers something quite different to conventional forms of enquiry with their textual and numeric outputs. Sound composition operates 'in a different emotive register than does most academic writing. It is ephemeral, elusive ... sound and music have the power to move us in unpredictable ways'.⁵² Of course, conventional research methods also have more-than-representational and affective aspects. And sound art is not some utopian domain of free creativity. It has its fair share of institutional politics and hierarchies, fraught relations with capital and knowledge, aesthetic clichés and other problems. However, my experience with the audio drift suggests that there are certain affects and ways of knowing that environmental audio methods are particularly geared to producing, and which are valuable for remaking the relations between people and places.⁵³

In a context where representations of space often involve images with strong truth claims attached – maps, photographs, architectural drawings, landscape paintings and so on – environmental audio recordings are prone to being more elusive in their meanings: unverifiable, referentially unstable, hinting at things which are never quite fully revealed. Audio is therefore

useful for emphasizing the partiality and provisionality of geographic knowledge. Environmental recordings are also ideal for amplifying the haunted qualities of sites, since by displacing the sounds of spaces they 'estrangle, dislocate, render uncanny'.⁵⁴ When mobile playback technologies are used to fold these dislocated sounds back into places, the resulting displacement and re-placement is literally revenant,⁵⁵ returning sound to the environment but in a form that has become other. Listeners to *Kilmaheew Audio Drift No.1* have reported dream-like, hallucinatory and uncanny affects: being spooked or freaked out, ducking at the sound of golfers teeing off, a creepy sense of someone following close behind, being prompted to move more animatedly or to hasten away from certain parts of the site, and general feelings of unease, confusion and disorientation. The recording of the barking dog exemplifies these more-than-representational qualities. This recording is easily recognisable, and listened to elsewhere might function as a representation of a barking dog, but in situ it does something more than that: it performs a haunting, generating an uncanny sense of the dog as an absent presence. For some, this spectrality was experienced as startling and unsettling, but others suggested that it brought the landscape back to life, repopulating it and countering its apparent emptiness and loneliness, resulting in a sense of connectedness to the place. Not all listeners have reported such marked affects, but for those who have, the drift appears to have moved them, powerfully in some cases, and this movement has given rise to new ways of experiencing the site. In summary, audio geography offers ways of intervening in the relations between space and subjectivity, loosening the grip of fixed representations, and counteracting the stultifying politics of detached objectivity that still surrounds much academic research. However, it is also important to avoid any uncritical celebration of audio geography, haunting or ruins. In conclusion, I want to make some brief critical reflections on issues of ethics, epistemology and spectrality.

Audio geography: ethics, epistemology and the spectral

Whatever the possible benefits of using environmental audio for research, its affective potency also intensifies ethical concerns, especially in contested sites. Uncanny, unsettling works such as the audio drift may be experienced as imaginative in situ interventions, but they can also be confusing and disorientating, even scary or traumatic, like a bad trip. Responses of this kind are not necessarily to be avoided. There is no reason why audio geographies should make places safe and comprehensible for easy consumption. The Kilmaheew drift reflected the site's contested history and uncertain future rather than smoothing over its problems. Nevertheless, I was taken aback by the affective intensity experienced by some listeners. It is therefore worth considering the ethical implications of inviting members of the public to engage with such works. Auditioned on headphones in situ, environmental audio is immersive and constantly unfolding, without the safe distance and reassuring stability of written texts. Responses to the drift suggest that environmental audio works may on occasion overwhelm listeners, creating a sense of entrapment or distress. This possibility calls for care in how works are framed and introduced, such as whether listeners are advised to walk alone or in groups, and perhaps giving people ample warning where appropriate, especially if the research topic is emotionally sensitive.

The affects of audio geography can also create physical safety issues, particularly with works for walking in hazardous environments such as ruins. Environmental audio can affect listeners' movement, spatial awareness and balance. For example, one local resident, mesmerized by watery sounds in the drift, found herself drawn towards one of the burns, whereupon she lost her footing and fell in. No harm was done, and the person took the mishap with good humour, but incidents such as this illustrate the capacity of environmental audio to physically move bodies. There are some basic considerations here about public safety, provisions for first aid, and advice about terrain and suitable

clothing. On the drift download web page and in organized visits to the site we advised people to wear walking boots and waterproofs, and not to enter any of the ruined buildings due to the hazards involved. Of course, it is impossible to control what listeners will actually do; the issue is what to offer as general advice. A recent serious accident in Kilmahew's walled garden, though unconnected to any of our research activities, underlines the importance of such matters in ruinous, unstable or unpredictable sites. Whilst I was comfortable taking responsibility for my own safety when entering the ruins for sound recording, it would have felt unethical to encourage the general public to do the same.

As for epistemology, the drift highlighted a tension between knowing a place through listening to its sounds, and knowing it through listening to a site-specific audio composition based on recordings of those sounds. For some, the audio provided intriguing additional layers of knowledge, revealing hidden aspects of the site and drawing closer attention to its multisensory qualities. For others, it was experienced as excessive, with too many layers drowning out the site's 'real' indigenous sounds. The question arises: why not simply let people walk and listen unencumbered by electronic media? Listening was the starting point for producing the audio drift, and this could have been built on by creating a much simpler on-site intervention such as a listening walk.⁵⁶

The drift functions precisely to draw out the conflict between these two ways of knowing, bringing the issue to a head by superimposing audio and environment, confronting them with one another, blurring the boundary between them. After all, it is only through audio recordings that any distinction between recorded and 'live' sounds can be made, experienced and evaluated.⁵⁷ The drift prompted some listeners to turn off the audio and pay attention to the 'live' environmental sounds instead, but in these cases it seems likely that the work still shaped their aural experiences, prompting value judgements about what they wanted to listen to and how. The very act of opting out consolidates a particular listening sensibility. Regardless of whether environmental audio works are embraced or not, liked or disliked, they can draw attention to the sonic aspects of places and raise productive questions about the authenticity of different kinds of sonic knowledge.

Finally, the uncanny affects produced by the audio drift offer an implicit critique of the ocular-centrism of the spectral. Derrida writes of hauntology as operating through sight, having visions and being seen by ghosts,⁵⁸ and the etymology of the word 'spectral' is linked to seeing, but Toop argues that, in its intangibility and ambiguity, 'sound is a haunting, a ghost ... never entirely distinct from auditory hallucinations.'⁵⁹ Environmental audio works 'heighten our exposure to that which is absent from presence, they can amplify loss'⁶⁰ and as such they 'approximate ... the spatiality of ruins, the fragmentation of memory, and the aporias of testimony'.⁶¹ Geographers researching haunting, ruination and related matters might therefore benefit from a closer engagement with sound and audio media. Perhaps environmental audio itself is a kind of ruin, an evocative physical trace that hints at what the recorded space might have been like but is always obviously partial, leaving much to the imagination, unlike the sense of completeness that tends to be produced by video, the apparent objectivity of documentary photography or the comprehensive descriptions common in ethnographic writing.

The early development of audio technologies was marked by a fascination with the ghostly and 'the possibility of preserving the voice beyond the death of the speaker'.⁶² There are connections to be made here to electronic voice phenomena (EVP), psychoacoustics and also the recent retro-futurist strain of British electronic music labeled 'hauntology' by critics Mark Fisher and Simon Reynolds. Exemplified by the Ghost Box label and artists such as Boards of Canada, Broadcast and The Caretaker, hauntological music is characterized by a lo-fi aesthetic of decay and crackle, tape saturation and hiss, vintage analogue equipment (albeit simulated in many cases) and cultural references from the 1960s and 1970s, used to effect a ghostly infiltration of the present by the recent past⁶³ and a melancholic sense of loss.⁶⁴ The kind of environmental audio I have described differs

in its aesthetics and methods, using high quality binaural recording and in situ headphone playback to create auditory phantoms, and hence a more immediate, less stylized and less explicitly melancholic haunting. Nevertheless, there are some parallels in the use of noisy cassette machines to evoke premature decay in the final section of the drift, and the drift's fictionalization of landscape, which echoes the psychogeographical tendency of much hauntological music. The technologies, techniques and aesthetics of both environmental audio and hauntological music might therefore be added to Matless' list of 'devices making haunting likely',⁶⁵ affording interesting possibilities for spectral geographies.⁶⁶

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